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Montana Power Company
The Montana Power Company long range plan

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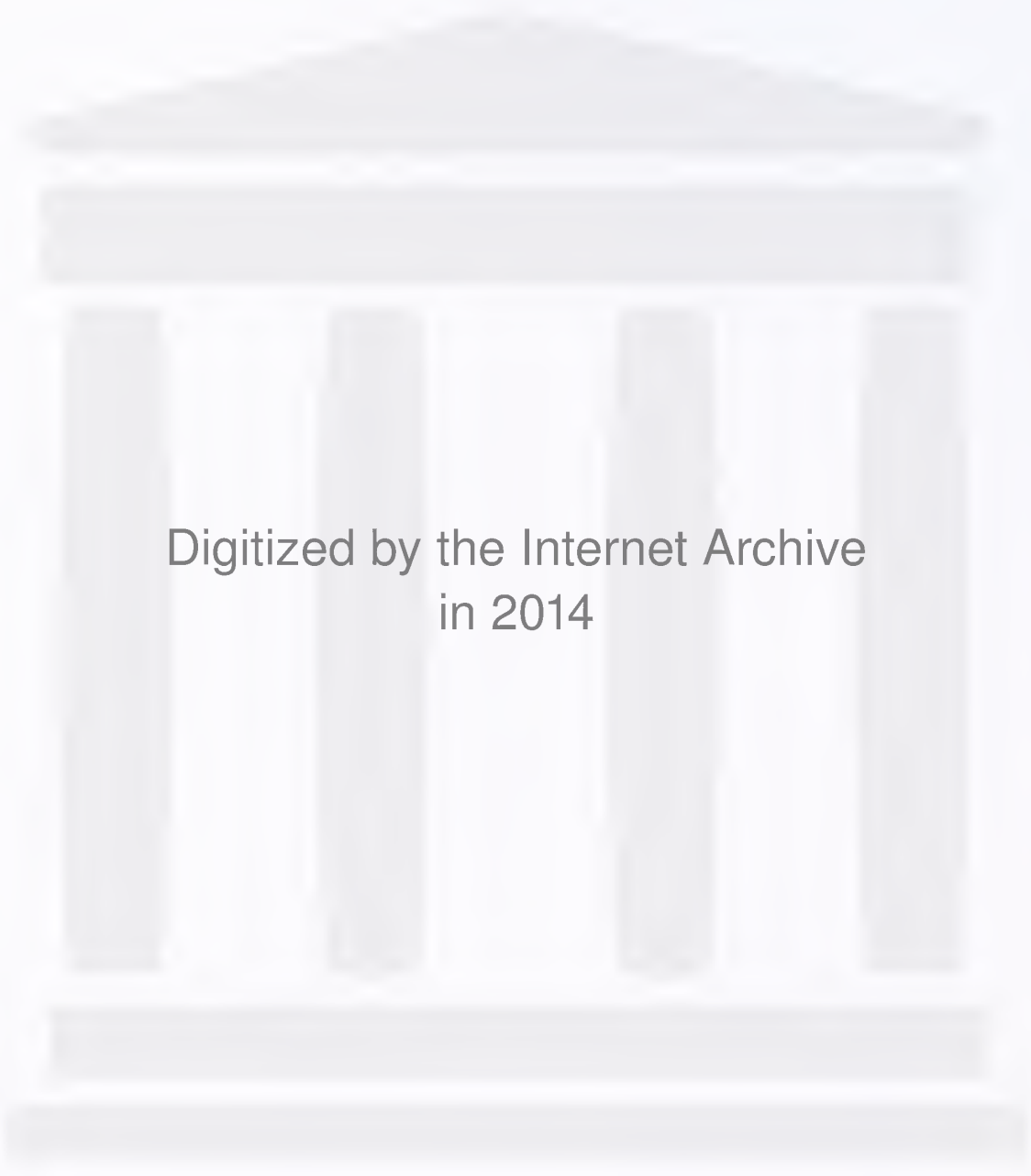
ERRATA SHEET

Page 12, Paragraph 3, Line 1, Change "1980" to "1989"

Page 12, Paragraph 3, Line 10, Change "1980" to "1989"

Exhibit "A", 350 MW Plant filed on in 1981 should have a "C" indicated in 1989

Exhibit "B2" was incorrectly collated and ended up behind Exhibit "C"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Long-Range Plan of The Washington Water Power Company
Pursuant to Part 5 of the Montana Major Facility Siting Act
As of April 1, 1980

Section 2(a) The general location, size, and type of all facilities to be owned and operated by the utility or person whose construction is projected to commence during the ensuing ten years, as well as those facilities to be removed from service during the planning period.

Thompson Falls-Pine Creek 230-Kv Line:

The Company is planning the addition of a 230-kv transmission line connecting the Company's Noxon-Hot Springs line in the vicinity of Thompson Falls, Montana, and the Pine Creek substation near Kellogg, Idaho. This line will serve a 230/115-kv substation near Wallace, Idaho. A 230-kv switching station is planned at the connection point with the Noxon-Hot Springs line. This transmission line will be required to provide transmission capacity and insure service reliability to the Kellogg-Wallace mining area. The line will provide capacity for (1) future load growth, (2) additional east-to-west power transfer capacity for the Company system, and (3) load relief on the Noxon-Pine Creek, Cabinet-Rathdrum, and Noxon-Bell 230-kv lines during outage conditions. An alternate line from Noxon, Montana, to Pine Creek is also being studied.

This alternate line might be an additional project line for the Noxon Project and subject to being licensed by the Federal Energy Regulatory Commission. The Thompson Falls-Pine Creek 230-kv line is the preferred line but, since this project is being done jointly with BPA's Bell-Hot Springs 500-kv line, the final configuration may be dependent upon BPA's plans. The new Company line is projected to be in service in the late fall of 1984. The Company plans to file an application for the line in the second half of 1982.

Section 2(b) In the case of utility facilities, a description of efforts by the utility or person to coordinate the plan with other utilities or persons so as to provide a coordinated regional plan for meeting the energy needs of the region.

Section 2(c) A description of the efforts to involve environmental protection and land use planning agencies in the planning process, as well as other efforts to identify and minimize environmental problems at the earliest possible stage in the planning process.

Thompson Falls-Pine Creek 230-Kv Line:

The Washington Water Power Company is planning this facility jointly with BPA's Bell-Hot Springs 500-kv line. The Company project will be included as a part of BPA's EIS. The Company continues to consult with environmental protection and land use planning agencies and is represented on the Hot Springs-Bell EIS Steering Committee, together with BPA, the Burea of Indian Affairs, the Idaho Bureau of Land Management, the Confederated Salish-Kootenai Tribes, the Corps of Engineers, the Heritage Conservation and Recreation Service, the State of Idaho, the State of

Montana Department of Natural Resources and Conservation, the U. S. Fish & Wildlife Service, and the U. S. Forest Service.

Section 2(d): Projections of the demand for the service rendered by the utility or person and explanation of the basis for those projections and a description of the manner and extent to which the proposed facilities will meet the projected demand.

Load Projections:

Exhibit A, attached, is a tabulation of expected electric requirements on The Washington Water Power Company system. The Washington Water Power Company does not serve a unit area within the state of Montana.

Assessment of the Effect on Demand of Changes in Price and Rate Structures:

According to economic theory, price and rate structure, together with many other economic and social variables, should influence the demand for electricity. Separating the effect of price and rate schedule and determining the influence of that variable on electricity demand would by very difficult and has not been done for The Washington Water Power Company's system.

Assumptions Used In Projections:

The assumption for population growth generally follows the latest BPA population estimates for counties served by the Company in Idaho and Washington. Energy use per residential customers for other than space heating was held constant over the forecast horizon.

For existing customers, the use per customer for space heating was decreased to reflect projected weatherization of homes. For new customers, the use per customer for space heating was held constant but at a lower level than for existing homes.

The percent of customers with electric space heat is forecasted to increase from present levels to 65% by the year 2000.

The historical relationship between the number of commercial customers to residential customers was forecast to continue. This relationship implies that the number of residential customers served by each commercial customer will increase through time. The growth in the kilowatt-hour use per commercial customer was forecast to decrease through the forecast period to reflect more efficient use of electricity.

Industrial energy was projected to grow at present trends. Economic activity was not explicitly used to forecast energy consumption, but implicitly is expected to follow the trend of the last five to ten years. Conservation was accounted for in the leveling off of use per customer in the residential and commercial sectors. Renewable alternative energy use such as cogeneration is reflected in the Company's resource forecast and not in the energy demand.

Thompson Falls-Pine Creek Line:

The Thompson Falls-Pine Creek 230-kv line will provide additional capacity and needed reliability to the growing Coeur d'Alene mining area of northern Idaho. The mining area is currently fed by two 115-kv lines, running from the Company's Pine Creek to Burke stations and on to The Montana Power Company's Thompson Falls station. As the Pine Creek substation is essentially the only 230/115-kv source for the area, the loss of the 230-kv or 115-kv busses requires load shedding since the 115-kv support from outside area cannot carry the 230 mw of projected mining area load (1979-80 winter load projected at a growth of 4.02%/year for five years). The addition of another 230-kv line and a second 230/115-kv source to the mining area will prevent low voltage or overload conditions on the 115-kv system that would otherwise occur as a result of single contingency outages.

The Thompson Falls-Pine Creek 230-kv line will provide the additional capacity from the Noxon area west to prevent overloads of the 230-kv lines from the Montana-Idaho border area during load and generation conditions now shown in area plans.

During the spring when area load is low and area generation is high to make maximum use of spring runoff water, the 230-kv lines are heavily loaded carrying power west out of Idaho and Montana. Because of warmer spring temperatures, transmission capacity is reduced to roughly 80% of the winter rating. Should the 500-kv system sustain an outage west of Hot Springs, additional Colstrip, Montana, generation would be forced over the already heavily loaded Noxon-Pine Creek, Cabinet-Rathdrum, Libby-Rathdrum, and Noxon-Bell 230-kv lines. A number of studies show potential overloads for this critical loading configuration. The Thompson Falls-Pine Creek 230-kv line would provide the additional capacity to relieve the 230-kv lines leaving the Noxon-Cabinet area during heavy spring loading and 500-kv line outages.

Efforts Undertaken to Meet Expected Demand

The Company has undertaken and is currently pursuing a variety of generating facilities in order to meet the projected demand of its customers. In addition to Colstrip Units 3 and 4, located near Colstrip, Montana, of which the Company has 15% ownership, the Company owns 5% of WNP-3, a nuclear facility near Satsop, Washington, and 10% ownership of the proposed Skagit nuclear plant. In addition, the Company has under construction a sixth unit at its Post Falls hydroelectric plant on the Spokane River and is actively pursuing cogeneration contracts with its industrial customers.

In addition, the Company has under consideration a wood-fired generating plant proposed for the Kettle Falls, Washington, area and a coal-fired generating station to be located near Creston, Washington. The Company is also working with Pend Oreille County PUD in the development of their proposed Sullivan Lake hydro plant.

Due to delays in Colstrip Units 3 and 4 and other large thermal projects in which the Company is a participant, the Company had insufficient firm

resources to meet forecasted energy requirements for the period 1980-81 through 1989-90. To meet a portion of this deficiency, the Company has entered into a purchase arrangement with B.C. Hydro and has firmed up a fuel supply that can be used at its Northeast combustion turbine site near Spokane, Washington. With these arrangements, the Company can nearly meet its energy requirements under critical water through the 1982-83 contract year. After 1982-83, for the balance of the ten-year period, the Company is facing energy shortages. In addition, the Company is peak deficient in all years of the ten-year period. To help in meeting these deficiencies, the Compay is pursuing short-term power purchases and exchanges with other utilities.

Contracts with Non-Federal Utilities Serving Customers Within Montana:

Enclosed with the 1977 plan submitted December 27, 1977, are copies of each contract to which The Washington Water Power Company and non-federal utilities serving customers within Montana are parties. There have been no additions or deletions to those contracts. Please refer to the December 27, 1977, submittal.

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Exhibit A

The Washington Water Power Company

Net System Load Estimate

11/26/79

Figures are Mw.		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1980	PK	1547	1423	1310	1172	1055	1034	1050	1003	993	1192	1430	1557
	AV	1145	1039	982	856	770	755	761	742	735	858	1044	1144
1981	PK	1630	1492	1373	1223	1093	1074	1089	1031	1020	1233	1495	1629
	AV	1206	1089	1030	893	798	784	790	763	755	888	1092	1197
1982	PK	1635	1501	1384	1229	1097	1077	1090	1032	1026	1243	1504	1639
	AV	1213	1096	1038	897	801	786	790	764	759	895	1098	1205
1983	PK	1694	1555	1433	1271	1133	1111	1123	1066	1059	1285	1555	1698
	AV	1257	1135	1075	928	827	811	814	789	784	925	1135	1248
1984	PK	1752	1607	1480	1312	1168	1142	1154	1097	1093	1325	1605	1754
	AV	1300	1173	1110	958	853	834	837	812	809	954	1172	1289
1985	PK	1807	1656	1527	1352	1205	1177	1186	1130	1127	1365	1653	1808
	AV	1341	1209	1145	987	880	859	860	836	834	983	1207	1329
1986	PK	1879	1718	1583	1399	1242	1210	1218	1161	1161	1411	1714	1878
	AV	1394	1254	1187	1021	907	883	883	859	859	1016	1251	1380
1987	PK	1949	1778	1637	1444	1279	1241	1250	1192	1195	1456	1771	1944
	AV	1446	1298	1228	1054	938	906	906	882	884	1048	1293	1429
1988	PK	2018	1837	1692	1489	1318	1274	1281	1223	1228	1500	1829	2011
	AV	1497	1341	1269	1087	962	930	929	905	909	1080	1335	1478
1989	PK	2082	1893	1744	1532	1352	1305	1312	1254	1261	1543	1884	2073
	AV	1545	1382	1308	1118	987	953	951	928	933	1111	1375	1524
1990	PK	2147	1954	1796	1575	1389	1338	1342	1285	1295	1586	1938	2136
	AV	1593	1424	1347	1150	1014	977	973	951	958	1142	1415	1570

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THE MONTANA POWER COMPANY
1980 LONG RANGE PLAN

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THE MONTANA POWER COMPANY

ANNUAL LONG RANGE PLAN

Filed as of April 1, 1980
Pursuant to the Montana Major Facilities Siting Act

I.1 INTRODUCTION

Pursuant to Section 75-20-501 of The Montana Major Facilities Siting Act and Section 36-2.8(6)-S860-S870 ARM, The Montana Power Company hereby submits as of April 1, 1980, its annual Long Range Plan to the Montana Department of Natural Resources and Conservation. Certain voluminous exhibits which are part of this Long Range Plan are not included in each copy of the plan, but are on file with the Montana Department of Natural Resources and Conservation for inspection.

It should be noted that the information in this Long Range Plan represents the best efforts of The Montana Power Company to set forth its plans and projections based on present knowledge, data and circumstances. Because present circumstances will unpredictably change, the plans and projections set forth herein will also necessarily change.

II. THE GENERAL LOCATION, SIZE AND TYPE OF THE UTILITY FACILITY TO BE OWNED AND OPERATED BY THE MONTANA POWER COMPANY, WHOSE CONSTRUCTION IS PROJECTED AS OF APRIL 1, 1980, TO COMMENCE DURING THE ENSUING TEN YEARS, AS WELL AS THOSE FACILITIES TO BE REMOVED FROM SERVICE DURING THE PLANNING PERIOD[1].

II.1 ENERGY, GENERATING AND CONVERSION PLANTS AND ASSOCIATED FACILITIES

Energy, generating and conversion plants to be owned by The Montana Power Company whose construction is projected to commence during the ensuing ten (10) years, including an estimate of applicable filing and construction dates are shown on the chart entitled "Generation Base Plan" marked Exhibit "A" and attached hereto.

This "Base Plan" has been chosen to provide an orderly and timely plan for providing our future power requirements. The "Base Plan" provides the flexibility needed to incorporate possible changes and/or modifications which may result due to changes in economics, technology and legislation. The logical assumptions used in choosing this particular "Base Plan" are described below.

II.1.1 Base Plan Assumptions

The primary assumptions used for the "Base Plan" are that all current generation plants will remain available to us throughout the period, that existing contracts for purchases or sales will run their term without withdrawal or renewal, and that all additional resources required to meet

---

1. Montana Major Facilities Siting Act 75-20-501(2)(a)

the forecasted load will be a combination of base load thermal plants in nominal 350 MW increments and peaking plants in 25 to 75 megawatt increments.

The logic behind these assumptions is as follows:

1. Our existing generation plants can all be kept in good and efficient operating condition with the application of proper maintenance through the period shown. The Bird Plant will be nearly 40 years old by 1990 -- slightly beyond a typical life for such a plant, but its use for most of those years as a reserve plant should add substantially to its life. All the hydro plants are assumed to be relicensed to us as their current licenses expire. The current competition for a new license at Kerr makes this assumption a little insecure, but until the matter is settled we cannot assume otherwise.

2. With the exception of one contract, all of our existing purchase and sales contracts with "out of state" utilities expire before 1988. Because of the anticipated shortages of energy and peak in the Northwest region through the 1980's (and possibly beyond), we

have assumed that we will be unable to renew these contracts upon their expiration.

3. Our current knowledge of the energy technologies and economics through at least the 1980's in Montana indicates at this time that new energy requirements must be met basically with base-load fossil fired thermal and hydro plants. Economies of scale would indicate that 350 MW or larger are most economic in the thermal plants. Reserve requirements and other considerations indicate that new energy resources in blocks of 300-350 MW seem appropriate for our system. Peaking plants in the period shown are likely to be either combustion turbines, additional units at hydro sites, or pump-storage hydro. The first two types lend themselves nicely to the size range which seems to be required by us in the period except for the 1987-8 block of 225 MW necessitated by the expiration of peak purchase and energy/peak exchange contracts with BPA.

II.1.2 Base Plan Related to Load and Resources

The "Base Plan" is shown more specifically as it relates to the estimated loads on the tables entitled "The Montana Power Company Loads and Resources, Energy-Avg. "Mw"

and "Peak Mw" marked as Exhibits "B1" and Exhibit "B2" and attached hereto.

These load-resource tabulations list and summarize the total estimated load requirements and the committed resources which are available to meet these loads. Committed resources are defined to be those resources that exist, are under construction or have been contracted for, such as power purchases and exchanges. The difference between the committed resources and the load requirements give the surpluses and/or deficiencies that are expected to exist in the future. Using these forecasted deficits, additional plants are scheduled into the future, as shown on "Generation Base Plan", Exhibit "A", attached hereto.

II.1.3 Size, Type and Location of Facilities

Currently, as identified in our "Generation Base Plan", Exhibit "A", attached hereto, our plans center on the peaking plants between 1986 and 1988, and base-load energy plant needed in 1989. Economics today, the anticipated technology available commercially in the late 1980's, and environmental considerations indicate that the energy plant will most likely be a coal-fired, steam-electric plant somewhere in Montana. However, this position depends on whether Montana's siting and environmental laws and policies will allow any development in the State. We are currently underway with a siting study for this plant and have begun gathering background environmental data on several sites.

We are also actively participating in a regional siting study over the entire Northwest area.

Peaking plants, as currently envisioned, may be combustion turbines in Montana at several possible locations on our system. The size of the facilities contemplated may not come under the jurisdiction of the Siting Act. However, it is anticipated that for those facilities which fall within the terms of the Act, the appropriate application will be made to the Department of Natural Resources and Conservation at least two years before construction commences. An application for a permit to fire the combustion turbines on oil or gas for peaking services will be filed with the Department of Energy under the requirements of the Fuel Use Act.

II.1.4 Modification and Alternatives to the Generation Base Plan

Some modifications or variations to our "Base Plan" may be available. These possibilities are discussed below in general terms.

1. Conservation -- We have considered in our load forecasts the potential for conservation which can reasonably be expected from voluntary efforts of our customers, barring a catastrophic general economic recession like that of the 1930's and various proposed governmental mandates. Thus, this economic "resource" is

already included in our base plan for resource additions.

2. Solar Energy -- Solar energy for central station electric generation probably will not be available until after the year 2000. Active solar space and water heating systems are increasingly available now to individuals who can afford the investment in so equipping their homes or businesses and can take advantage of various tax credits. Architectural solutions to space heating requirements (passive, earth cover, etc.) are playing increasingly important roles in developing solar energy. Our load forecasts include a reasonable allowance for reduction in load from such consumer installed solar heating. The opportunity for electrical load reduction on our system from solar heat is obviously limited because of the existing high incidence of natural gas heating.

   We are actively involved with several solar heating projects around the State in monitoring their performance to help develop their economic viability.

3. Wind Energy -- Recent advances in blade technology have improved the potential for

developing wind energy for central station electric service. This development might be economically viable in the late 1980's. Some limited development by individuals or from individual machines will likely be available by the mid-1980's, and our load forecasts account for some reasonable amount of this development through the decade.

Our past efforts have resulted in MERDI and Montana Power being accepted by the Department of Energy as sponsors for a 160 ft. meteorological tower to be located in the Livingston area in conjunction with a 25 KW wind machine purchased by Montana Power. This two-year monitoring effort is hoped to result in the acquisition of a MOD.5 (3.5 to 4 MW) machine for installation in 1983 or 1984, toward which we will commit funding. Success in these efforts could, under proper economic conditions, lead to substantial penetration of wind into the electrical resources mix in the 1990's.

Additionally, interfacing problems between the machines and the utility system are being investigated on our system through several individual projects in cooperation with the owners.

4. Hydroelectric Potential -- We are continuing our re-evaluation, in the light of new energy economics, of the viability of hydroelectric generation in Montana at (1) "small" undeveloped hydro sites, generally where a reservoir already exists, (2) other larger sites, both within and outside the State, such as Buffalo Rapids, Mountain Sheep-Pleasant Valley, and Carter, and (3) at existing hydroelectric plants where redevelopment with larger or more generators might now be economic for increased peaking capacity. Currently the most promising possibilities are those shown on the chart entitled "Possible Base Plan Modifications & Additions" marked Exhibit "C" and attached hereto. All of the projects listed above are dependent upon receipt of licenses from the Federal Energy Regulatory Commission and, in addition, the upgrade of Kerr and construction of Buffalo Rapids are dependent upon agreement with the Confederated Kootenai and Salish Tribes.

The preliminary results indicate most of these projects could be constructed by 1987. If this were the case, it would eliminate the requirement for 25 MW of combustion turbines

in operating year 1986-87, reduce the 225 MW of combustion turbines in 1987-88 to 50 MW, and would delay the 1989 350 MW thermal plant one year to 1990-91 at the expense of 50 MW of combustion turbines in 1989-90.

5. Co-generation -- Our many discussions with potential co-generators on our system have failed to uncover a feasible project, other than the existing co-generation at the Champion Packaging Division plant near Missoula.

The wood products industry is experiencing a shortage of required by-product fuel and is reticent to use additional natural gas or coal for their process steam requirements because of economic or environmental reasons. Other industries, which normally do not produce by-product fuel, cannot for the same reasons justify producing higher temperature and pressure steam for their process requirements plus additional electric generation.

II.2 GASIFICATION PLANT AND ASSOCIATED FACILITIES

The Montana Power Company is continuing investigation of economics and feasibility of coal gasification. At this time, we have no plan for engineering, locating, siting, financing, or constructing such a plant. A partner

or partners, with substantial financial standing, would be required to raise the necessary capital for such a plant. We are presently investigating the possibility of a joint gasification project with Montana-Dakota Utilities Company. Whether a coal gasification plant or plants would be proposed within the next ten years will depend, among other things, on such factors as the continued availability of gas from Canada, new discoveries of gas available to Montana Power in Montana and neighboring states, an Alaskan pipeline which would make gas available to Montana, and development of gasification technology and availability of capital.

II.3 ELECTRIC TRANSMISSION LINES

Electric transmission line construction projects projected to commence during the next ten years may be classified for purposes of discussion into two groups. The first group consists of those transmission lines for which application has or will most likely be made or a certificate has been received. A second group consists of transmission lines which are now under study by The Montana Power Company for maintaining adequate service to customers for which application may be made during the next ten years. Whether and when these facilities will be built depends upon several factors, including the results of studies now under way by The Montana Power Company, and the future load growth.

The transmission lines in this first group with their general location and appropriate length and voltage,

and their approximate date for filing of application, pre-construction and construction, are shown on the chart entitled "Transmission", marked as Exhibit "D" and attached hereto. Preconstruction activities may include surveying, environmental assessments, right-of-way acquisitions, and centerline location.

The transmission line construction projects in the second group along with their approximate general location, approximate length and voltage, and approximate date for filing of application and construction are shown on the chart entitled "Potential Transmission", marked as Exhibit "E" and attached hereto.

Siting studies are in progress for the 1980 base-load energy plant, with potential siting areas reduced to four. Two of these potential sites are located near Great Falls, one near Chester, and one near Hardin. Detailed transmission studies including power flow and stability analysis have only recently been started so that no specific transmission lines can be listed. It is expected, however, that maximum utilization of the existing transmission facilities will be made and that details of the system additions required for Resource 1980 will be submitted in future editions of the "Long Range Plan."

Possible combustion turbine related transmission studies have not yet been made but are not expected to result in transmission projects requiring filing with the Department.

Turbines will probably be located near load centers, but specific sites have not yet been determined.

Hydro projects or additions to existing projects, with the possible exception of Buffalo Rapids, would likely require little or no additions to the existing transmission system. Studies have not been run to provide the final transmission details. The Carter project would be located on the Missouri River near Carter, Montana, and the Buffalo Rapids project would be located on the Flathead River below the Kerr project.

Transmission lines which may be relocated, reconstructed or upgraded which constitute "facilities" or "associated facilities" under the Act, are shown on the chart entitled "Transmission Projects for Conversion to Higher Voltage Levels or to be Reconductored," marked as Exhibit "F" and attached hereto. Transmission lines which are not "facilities" or "associated facilities" under the Act are not included because (1) it is impossible to determine which, if any, small transmission lines not covered by the Siting Act may be relocated, reconstructed or upgraded; and (2) it is our position that the requirement in the regulations requiring information on transmission facilities of a design capacity of 50 kilovolts is beyond the scope and legal authority of the department because those transmission lines are not subject to the jurisdiction of the department under the Act.

III. A DESCRIPTION OF EFFORTS BY THE MONTANA POWER COMPANY TO COORDINATE ITS PLANS WITH OTHER UTILITIES AS TO PROVIDE A COORDINATED REGIONAL PLAN FOR MEETING THE UTILITIES' NEEDS OF THE REGIONS[2]

III.1 GENERAL

Two basic facts are evident from examining The Montana Power Company's coordinated regional planning. First, there is a great amount of cooperation among private and public utilities in the Pacific Northwest. Secondly, there are many benefits to The Montana Power Company and other utilities in the Pacific Northwest and to their customers as a result of this regional cooperation.

The Montana Power Company regional efforts to improve its system reliability and availability of power supply are directed primarily to cooperation with other utilities in the Columbia River Basin of the Pacific Northwest because the River Basin provides a logical planning unit from an historical, geographical and electrical system standpoint.

The Montana Power Company has many agreements, as described in detail below, with other utilities in the Columbia River Basin. Montana Power Company continues these regional efforts to improve reliability and availability of power supply with the publicly-owned utilities (such as rural cooperatives, municipals, and public utility districts)

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2. Montana Major Facilities Siting Act 75-20-501(2)(b)

and with privately owned utilities (such as Puget Sound Power and Light Company, The Washington Water Power Company, Portland General Electric Company, Pacific Power and Light Company, etc.) and with other government agencies (such as Bonneville Power Administration, Corps of Engineers and Western Area Power Administration). Montana Power also works closely with utilities in Montana, including the rural cooperatives.

III.2 COOPERATION AMONG UTILITIES

Cooperation among utilities in the Pacific Northwest has historically evolved, and now is structured by various organizations and agreements. For example, these organizations and agreements include:

(1) Western Systems Coordinating Council which was organized August 4, 1967, to promote reliability of bulk power electric systems in the West. Members now include twenty (20) investor-owned and twenty-seven (27) publicly or cooperative-owned systems as well as fourteen (14) affiliated member electrical systems. The area covers all or parts of fourteen (14) western states, Alberta, and British Columbia. The purpose of the Council is to provide a formal means for exchange of data and information, and to make regional studies and recommendations that will have a favorable bearing on the reliability and adequacy of electric service in the West.

(2) The Pacific Northwest Utilities Conference Committee consists of 108 non-federal public agencies and

five private companies. Its purposes include the coordination of load/resource planning in the Northwest region. The Montana Power Company is now an active and formal member of the Committee.

(3) The Northwest Power Pool, of which The Montana Power Company is one of the organizers, coordinates the bulk power system operation in the Northwest area. It is a longstanding and successful voluntary power pool and one of the oldest in the nation. Members of the Northwest Power Pool coordinate and optimize their respective bulk system operations to enhance reliability and efficiency.

(4) The Intercompany Pool (ICP) is a formal power pool organization of seven investor-owned utilities within the Northwest Power Pool area. Its express purposes include joint planning for additional required resources and transmission, pooling of reserve requirements, and optimizing use and distribution of secondary energy among the members.

(5) The Pacific Northwest Coordination Agreement was culminated in 1964 after years of negotiation among private and public utilities on the Columbia River System. Its principal purposes are to coordinate and optimize hydro generation operation and to allow equitable distribution of benefits from hydro storage developments in the Columbia River Basin.

(6) The Pacific Northwest Power Company, of which The Montana Power Company is a participant, was formed to

pursue development of hydro-generation, particularly on the Snake River.

(7) Other agreements among individual utilities such as the AMPS Agreement (Associated Mountain Power Systems), consisting of Pacific Power and Light Company, Utah Power and Light Company, The Washington Water Power Company, The Montana Power Company and Idaho Power Company, are designed for the exchange of power and sharing of transmission capacity. For a limited period this agreement also provided for sharing the costs and outputs of particular steam-generating plants in Wyoming.

(8) The Montana Power Company has been working with Montana-Dakota Utilities to coordinate and optimize gas supply within their systems and Montana.

(9) The Montana Power Company is a party to the Missouri River Coordination Agreement with the Western Area Power Administration which is designed to optimize water resources in the Missouri River Drainage.

(10) There are also agreements and working relationships with the federal agencies such as the Bonneville Power Administration and the Western Area Power Administration, and with various cooperatives in the State of Montana such as the Central Montana G&T and other system review with cooperatives in Montana. Presently the cooperatives are negotiating to participate in Colstrip 3 and 4.

III.2.1 Benefits of Regional Cooperation

The benefits of such regional agreements and organizations as discussed above are:

(1) Maximizing the use of resources;

(2) Minimizing the cost of energy to utility customers;

(3) Providing reliability and better service; and

(4) Minimizing environmental impact.

These benefits and objectives are studied and pursued in consideration of climates, water sheds, time zones, types of loads, etc., of each utility in the region. The exchange of power among utilities in the joint participation and construction and operation of facilities inures to all of these objectives.

An example of this type of regional planning by the Pacific Northwest utilities is found in the annual West Group Forecast of the Pacific Northwest Utilities Conference Committee, which lists the combined resources available to meet those loads. Included in those resources are many jointly-planned plants to supply future resource requirements.

This regional cooperation allows a utility such as The Montana Power Company, which may have deficiency over a period of years, to import power from another state and utility in order to meet its deficiencies. Such an exchange of power and participation keeps the utility from having to

build small facilities every time the utility has a small increase in load demand. The utility may be an importer for a period of time, and then it may be an exporter, and then in a few years, it will become an importer again.

This exchange of power among utilities in the Northwest may also occur at certain times of the year and times of the day because of the diversity of peak loads among utilities in this region.

Secondly, regional cooperation and interconnected systems provide greater reliability to the customers of all regions. For example, if one utility's generation or transmission is out of service, another utility's facilities may help accommodate the utility with facilities out of service.

Thirdly, for the same amount of energy and service, the cost of construction and operation of fewer large facilities is less than the cost of construction and operation of many smaller facilities. This helps get energy to customers at the lowest possible rate.

Fourth, fewer large facilities often have less environmental impact than many smaller facilities. For example, one larger transmission line may be built in lieu of several smaller transmission lines.

In summary, these objectives and resulting benefits of regional cooperation are in the interest of each utility and each of their customers. It is submitted that the

regional cooperation is envisioned in siting legislation such as the Montana Major Facilities Siting Act.

III.3 EXCHANGE AGREEMENTS

Previously a list of exchange, pooling and interconnection contracts dated March 20, 1979, was submitted to the Department.

An updated version of the list, dated March 26, 1980, and marked Exhibit G is attached hereto.

IV. A DESCRIPTION OF THE MONTANA POWER COMPANY'S EFFORTS TO INVOLVE ENVIRONMENTAL PROTECTION AND LAND USE PLANNING AGENCIES IN THE PLANNING PROCESS, AS WELL AS OTHER EFFORTS OF THE MONTANA POWER COMPANY TO IDENTIFY AND TO MINIMIZE ENVIRONMENTAL PROBLEMS AT THE EARLIEST POSSIBLE STAGE IN THE PLANNING PROCESS[3]

IV.1 GENERAL ENVIRONMENTAL POLICY

It is The Montana Power Company's policy to participate with federal and state agencies, as well as public interest groups and citizens, to encourage coordination of energy and environmental programs.

IV.2 PARTICIPATION IN LAND USE AND ENVIRONMENTAL PLANNING

The Montana Power Company continues to research new environmental technologies as an integral part of its energy planning process.

As part of the preliminary work on Colstrip Units 3 and 4, the engineering staff has worked closely with the United States Environmental Protection Agency (EPA) on

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3. Montana Major Facilities Siting Act 75-20-501(2)(c)

meteorological and air quality modeling pursuant to meeting Class I air quality standards of the Northern Cheyenne Indian Reservation, south of Colstrip. Venturi wet scrubbers, which were substantially new technology when installed by The Montana Power Company at Colstrip Units 1 and 2, will be used at Units 3 and 4. Also, a process that employs dolomitic lime to increase sulfur dioxide removal from emissions has been developed for use at Colstrip Units 3 and 4.

The Montana Power Company provides the Montana Department of Health and Environmental Sciences with monthly ambient air quality reports from monitoring stations in the Colstrip vicinity. The Company provides the Department with periodic groundwater quality reports from sample wells at Colstrip. Under the Montana Pollution Discharge Elimination System of the Clean Water Act, the Company also provides the Department and the EPA with quarterly water quality reports on discharges from the Company's sewage treatment plants and monthly reports on water discharge from the J. E. Corette Generating Plant at Billings.

The Montana Power Company is conducting, supporting, or participating in a number of environmental studies. At Colstrip, studies underway include monitoring the water in the settling ponds, surveying wildlife, conducting a long-term infrared study of the 200-square-mile area surrounding Colstrip, surveying vegetation through a study contracted to the Montana Agricultural Experiment Station, and monitoring

the benthic community and water quality of Armell's Creek and both natural and man-made ponds in reclamation areas. Outside the Colstrip area, a study is proceeding on sediment loading of the Clark Fork River near Missoula, general Bio surveys are proceeding on the Clark Fork River near Thompson Falls and on the Missouri River near Great Falls.

In transmission and pipeline projects, it is the Company's policy to involve early in the planning process appropriate land-use planners at the federal, state and local levels as well as individual landowners. Environmental assessments are provided by the Company for projects that affect waterways, federal lands or state lands. The Company also submits formal comments on land-use plans proposed by federal agencies.

The Montana Power Company's environmental staff is comprised of a rather wide background of expertise. The disciplines represented are biology, geology, range management, recreation resourse management, biochemistry, chemical engineering, environmental engineering, electronic and computer technology. Expertise is kept up-to-date by on-going participation in various professional associations. Active membership is maintained in the following: Ecological Society of America, American Fisheries Society, North American Benthological Society, Power Biologists Association, Air Pollution Control Association, American Chemical Society and the National Recreational & Park Association. The staff

also participates in various state and federal environmental activities.

V. PROJECTIONS OF THE DEMAND FOR SERVICES RENDERED BY THE MONTANA POWER COMPANY AND EXPLANATION OF THE BASIS FOR SUCH PROJECTIONS, AND A DESCRIPTION OF THE MANNER AND EXTENT TO WHICH THE PROPOSED FACILITIES WILL MEET THE PROJECTED DEMAND[4]

V.1 GENERAL

The Montana Power Company continuously monitors the demand for electricity and studies and pursues alternate resources to meet the demand. In addition to following the national and regional trends in energy use and developments in resource technology, the Company also makes load and resource forecasts of its own total system.

V.1.2 System Load Forecasts

Total system load forecasts are reviewed and updated frequently by The Montana Power Company. The latest official forecast was made in October, 1979. The projected annual loads for the next ten (10) operating years (July-June) are shown for annual energy and peak on the charts, marked Exhibits "B1" and "B2" and attached hereto.

V.1.2.1 Process and Assumptions

The electric load forecast of The Montana Power Company is developed from a five sector model with sector definitions determined by electricity usage patterns. The five sectors are: Residential, Commercial, Small Industrial,

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4. Montana Utility Siting Act Section 75-20-501(2)(d)

Large Industrial, and Other. Sales to each sector are forecast independently for a 20-year period, and then disaggregated and/or adjusted to produce detailed revenue forecasts and a load forecast that is the basis of the Company's long range resource planning. The forecast is produced through the use of computer modeling with applications of informed professional judgment where necessary and appropriate. This type of an approach allows for sensitivity analysis and scenario testing and represents a decided step-up from simple trending.

The Large Industrial sector consumes about 28% of MPC's total sales and consists of nine large contract customers involved in various industrial processes including primary metal mining and refining, petroleum refining, woods products manufacturing and general ore smelting. As such, this sector does not lend itself to modeling at least at MPC's service territory level. The forecast is derived through detailed interviews with each firm concerning future additions or deletions of electricity using machinery, etc.

The Other sector is composed of several small nonhomogeneous and/or flat loads. Each component of the Other sector (in total, this sector consumes 11% of MPC's total sales) is forecast individually by trending, contract interpretation and professional judgment.

The Residential, Commercial, and Small Industrial sectors account for about 61% of MPC's total sales. These three sectors are each modeled econometrically. The three

models are of the "aggregate econometric" type which is to say that they are primarily driven by an economic base model of the State, which in turn determines population and other associated demographic and economic characteristics of that population (e.g., age distribution, employment and income by sector, and migration rates). The economic base of an area is dependent on those business activities which bring "new" dollars into the economy by selling exports. In Montana's case, these "basic" activities include agriculture, mining, and refining (including oil, gas, coal, among others), manufacturing (primarily wood products), and tourism. Our forecast for each of these industries (coupled with the national outlook to a lesser extent) is the foundation of the econometric portion of the Load Forecast and also one of the primary judgmental components in the forecasts of the other two sectors.

The forecast includes our estimate of cooperative loads for which we have historically supplied the resources, and may not agree with individual cooperative forecasts of their purchases from us. Negotiations are presently underway in which the cooperatives would jointly own a seven (7) percent share of Colstrip Units 3 and 4. If these negotiations and Colstrip 3 and 4 are consummated, it is expected that MPC's obligation to serve the cooperatives would be limited and their future load growth would be served from their share of Colstrip 3 and 4. Currently negotiations

are underway between The Montana Power Company and the cooperatives concerning the source of resources required to serve their increased loads between now and the time Colstrip 3 becomes available. We have given notice that we will no longer be able to serve their increased loads beyond 1980 levels.

Our current load forecasts do not specifically include some potential new industrial loads of which we are aware and which are sufficiently large to merit special treatment in the forecasting effort. The plans are not yet "firmed up" to the point where we feel we have a commitment to serve, so they are not yet included in the forecast. Some of these loads are: (1) the Northern Tier Pipeline load which might amount to about 70 MW, (2) possible long range plans of the Anaconda Company for deep-level, block-cave mining in Butte, which would require substantial additions to hoisting load, and (3) possible refurbishing by Anaconda Company of their copper smelter in Anaconda which could require substantial additions to electricity requirements in order to meet emission standards.

V.1.2.3. Results*

The results of the 1980-2000 electric load forecast are summarized in Exhibits "H" and "I." Note that the

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*The results presented here are for the "most likely" scenario.

greatest growth is expected in the Residential sector followed closely by Commercial. Both of these sectors are driven by population growth with the Residential sector growing somewhat faster due to electric space heat penetrations that are not present in the Commericial sector. Of the two Industrial sectors, the Large Industrial shows substantial growth through the mid 80's tapering off the last 15 years of the forecast period to about 1.0% annual average growth rate; while the Small Industrial indicates a slump through 1981 then picks up due to oil, gas and coal mining through 1990, finally tapering off the final decade to slightly less than a 1.0% rate of growth in electricity consumption. The Other sector is essentially flat except for irrigation which will grow rapidly in the early 80's as farmers move to replace liquid fuel powered pumps with electricity and as agricultural commodity prices remain high. However, in the long run, the rate of agricultural investment will parallel the rate of growth in the GNP (approximately 2.5%) and the irrigation growth rate will similarly decline.

Overall, we are forecasting nothing exceptional for the economy of Montana. The State has experienced somewhat of a population boom in the past six to eight years due to unusually good years in agriculture (on the average), greatly increased tourism, the nation wide housing boom which has pumped up the lumber industry, and increasing oil and gas exploration and some coal mining. We

expect this to continue for a few more years (with the exception of the lumber industry) and then slacken to a stable growth to the end of the century. In the near term, Montana (with a resource extractive based economy), is in the fortuitous position of having many of the natural resources for which the nation as a whole is clamoring. Only our relatively under-developed transportation system will prevent the State from capitalizing to a greater extent than forecast. However, in the long run, resource extractive industries are capital, not labor intensive and other regions will reap the economic benefits of value added and Montana's economic boom of the 70's and early 80's will taper off. Also, it is difficult to be overly optimistic about the State's automobile dependent tourist industry as supplies of gasoline appear to be contracting.

Overall, then, what is forecast is a continuation of the State's relative historical position in the national economic perspective. In terms of sectorial shift-share analysis; we are gaining in oil, gas and mining, losing in lumber and tourism but, net, Montana will remain about the same economically and demographically through 2000 as over the past 30 years.

V.1.3 Unit Area by Substation Load Analysis

In addition to making load and resource forecasts for its total system, The Montana Power Company also monitors loads on each of its approximately 600 substations throughout its service area. The monthly peak and average kilowatts

used at each of these substations during 1979 are shown on the table marked Exhibit "J", entitled 1979 Peak and Average Kilowatt Readings for Distribution Substations, which is voluminous and one copy will be submitted to the Department along with this Long Range Plan.

Future energy demand patterns of a substation unit area for annual increments for the next ten years are shown on the table marked Exhibit "K", entitled "Estimated Peak Substation Load in Kilowatts 1980-1989" which is voluminous and one copy will be submitted to the Department along with this Long Range Plan. The area each of the substations serve and the substation are identified by an installation number, shown on a map which map will also be separately submitted to the Department.

The "NA" designation on the map indicates that the load for that particular substation was not acceptable. Such a designation is a result of one of several possible reasons, including that the reported substation load was obviously incorrect or no reading was reported.

The Estimated Peak Substation Load shown on the map is based on a recording period from April through April in each year.

The column headings are the year in which the recording period started. This is done so that winter peaks may be recorded for the three consecutive winter months of December, January and February; i.e., the 1979 peaks including

December of 1979 and January and February of 1980. The peaks indicated are not coincidental. They represent the maximum peak reading anticipated for that season and may occur at any time during that season.

The basic projections were made by fitting a compound growth curve by means of a least squares method fit to the existing data. The projections were then analyzed for their validity, taking into consideration the number of years of data the projection was based on, recent trends in the area, and known load additions. If a projection made by this method is obviously not valid, a reasonable prediction is made based on historical and known load growth data for the area.

V.1.4 Manner of Meeting System Loads

Projections based on continuous monitoring of substations and other factors are studied by The Montana Power Company to determine what expansion programs are necessary on its system. Expansion programs may mean increasing transformer size for capability, adding transformers, or building new substations, new transmission, or generation facilities. New substations or a shifting of loads from substation to substation or transformer to transformer may give an erroneous impression of actual area growth. A careful analysis of changes which have taken place is necessary to determine actual load growth in an area. To establish load growth rates, many factors

must be considered and analyzed. Weather conditions, extended outages, switching of loads, construction procedures, industrial and commercial development, urban development, development of residential subdivisions, irrigation and pumping, electric space heating and air conditioning requirements, changes in life styles, and the impacts of alternate energy sources are some of these factors which must be considered as they may affect load growth rates. It should be noted that the sum of the individual substation loads is not equal to the total system load forecast for two major reasons: (1) the substation loads do not include transmission losses sustained on the system between the resource and the substation, and (2) there is substantial diversity among the times of the individual substation peak loads. In load flow and stability computer studies of the entire system, the load distribution across the system is derived using proportionately "shrunk" substation loads so that their sum does equal the total system load forecast. In detailed studies of particular areas of the system, the substation load forecasts are used unadorned since that particular area can be expected to experience its own undiversified load.

When it appears that additional transmission lines or generation are needed as a result of this monthly and yearly monitoring of substation load changes and as a result of all of the many other factors such as weather conditions, extended outages, switching of loads, industrial and commercial

development, urban development, irrigation and pumping, etc., then more detailed studies of transmission line and generation requirements are made.

In addition to the continuous monitoring of the entire system by monthly and yearly changes, The Montana Power Company also takes into consideration the anticipated trends in type of load growth. For example, The Montana Power Company considers inquiries or requests for major additional loads from industrial, agricultural or other sources. The Montana Power Company also considers and anticipates that certain uses of electricity, such as the use of electricity for sprinkler irrigation or home heating, will create substantial additions to its load demand.

The Montana Power Company, in an attempt to fulfill its responsibility to provide electric service to its customers, attempts to balance electrical resources against electrical load. This is done on both a peak and energy basis. Such forecasts must also include consideration of reserves which are required to make sure that the Company can serve its customers at all times. The forecasts also take into account required down time of plants and facilities for maintenance and contracts of exchange with other utilities. When it is determined that a new source of generation or transmission is needed, The Montana Power Company considers the alternatives for meeting these requirements and makes further detailed studies regarding the needed facility. As pointed out in

Section III hereof, such studies are often conducted in cooperation with other utilities in the region.

V.1.5 Whether Projected Facilities Will Meet Projected Demands

The general size and type of utility facilities to be owned and operated by The Montana Power Company, which are discussed in Section II above of this Long Range Plan, are a result of all of these studies and considerations regarding projection and demand on both a total system basis and on a substation unit basis. If the facilities that are proposed in Section II above are allowed to be built as scheduled by The Montana Power Company, such facilities should adequately meet the projected demand. However, because some of the facilities including transmission lines such as Clyde Park-Big Sky-Dillon, and generating plants, such as Colstrip 3 and 4, have been delayed, primarily by regulatory authorities and litigation, customer demand may not be adequately met.

Adequate power to replace energy deficits may not be available because other utilities in the Pacific Northwest also forecast deficits in the 1980's, and because such replacement power is dependent upon the availability of high priced oil.

EXHIBIT A

GENERATION BASE PLAN

	1980				1981		1982		1983	1984	1985	1986	1987	1988	1989
	1st	2nd	3rd	4th	1st	2nd	1st	2nd							
Colstrip #3	C	C	C	C	C	C	C	C	C						
Colstrip #4	C	C	C	C	C	C	C	C	C	C					
350 MW Coal-fired Plant						F				P	C	C	C	C	
75 MW of Combustion Turbines								F	P	C	C				
25 MW of Combustion Turbines									F	P	C	C			
225 MW of Combustion Turbines										F	P	C	C		
25 MW of Combustion Turbines											F	P	C	C	
350 MW Coal-fired Plant												F			

F - File Application with DOE and/or Department of Natural Resources and Conservation as appropriate
P - Preconstruction
C - Construction

Schedule Commercial Operation Dates:

Colstrip #3	January 1, 1984
Colstrip #4	November 1, 1984
1st 350 MW Plant	July 1, 1989
75 MW of Comb. Turb.	November 1, 1985
25 MW of Comb. Turb.	November 1, 1986
225 MW of Comb. Turb.	November 1, 1987
25 MW of Comb. Turb.	November 1, 1988
2nd 350 MW Plant	July 1, 1997

THE MONTANA POWER COMPANY
LOADS AND RESOURCES
ENERGY - AVG. MW

	80-81	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89	89-90
FIRM ENERGY LOAD	858	889	920	964	1013	1047	1073	1097	1120	1141
EXCESS INDUSTRIAL LOAD	17	22	25	13	---	---	---	---	---	---
EXCESS COOP LOAD	4	8	13	9	---	---	---	---	---	---
TOTAL ENERGY REQUIREMENT	879	919	958	986	1013	1047	1073	1097	1120	1141
COMMITTED RESOURCES										
Hydro-Critical Water	337	337	337	337	337	337	337	337	337	337
Corette	130	130	130	130	130	130	130	130	130	130
Colstrip No. 1	124	124	124	124	124	124	124	124	124	124
Colstrip No. 2	124	124	124	124	124	124	124	124	124	124
Colstrip No. 3	---	---	---	63	142	158	158	158	158	158
Colstrip No. 4	---	---	---	---	84	147	158	158	158	158
Firm Transfers	132	140	138	76	78	80	82	98	103	105
NET COMMITTED RESOURCES	847	855	853	854	1019	1100	1113	1129	1134	1136
UNCOMMITTED RESOURCES										
Energy Resource										
Energy Resource										198
TOTAL UNCOMMITTED RESOURCES	---	---	---	---	---	---	---	---	---	198
TOTAL RESOURCES	847	855	853	854	1019	1100	1113	1129	1134	1334
SURPLUS (DEFICIENCY) OVER FIRM LOAD WITH CRITICAL WATER	(11)	(34)	(67)	(110)	6	53	40	32	14	193
MEDIAN WATER ADDED	48	50	51	51	51	51	51	51	51	51
SURPLUS (DEFICIENCY) OVER TOTAL LOAD WITH MEDIAN WATER	16	(14)	(54)	(81)	57	104	91	83	65	244
BIRD-IF FUEL & PERMITS ARE AVAILABLE	60	60	60	60	60	60	60	60	60	60
POTENTIAL LOADS (MEMO ONLY):										
Northern Tier Pipeline	---	---	10	17	28	40	59	66	66	66
Anaconda Co. (contract amount"-"forecast)	25	25	23	18	8	---	---	---	---	---

1) "FIRM ENERGY LOAD" is from 1979 LOAD FORECAST after removing "EXCESS INDUSTRIAL LOAD".

2) "EXCESS INDUSTRIAL LOAD" is the forecasted energy load which is in excess of the energy load found by applying an annual load factor to the present contract demands of eight of the large industrial contract customers. For this purpose, it is assumed that Hoerner Waldorf's present contract is for 55,000 KW firm demand with a 70% load factor and Exxon's "present" contract is for 25,000 KW firm demand with a 80% load factor. This excess is assumed to be firmed-up after Colstrip No. 3 becomes commercial and is included in the "FIRM ENERGY LOAD" after that time.

3) "EXCESS COOP LOAD" is the Coop's energy load in excess of the energy load found by applying an annual load factor to the 1980 contract demand and is excess load that can be served them if surplus power is available. It is not included in the 1979 LOAD FORECAST.

4) Colstrip Units 3 and 4 become commercial January 1984 and November 1984 respectively. Energy availability is at 60% for the first twelve months of commercial operation and 75% thereafter (includes scheduled maintenance). Our share is 30% of each unit; however, this may be reduced due to allocation procedures for the Coops.

5) "FIRM TRANSFERS" include BPA wheeling payment through 1989-90.

6) Uncommitted energy resources assume a net availability of 60% for first twelve months of commercial operation and 75% thereafter (based on 330 MW net capability).

Exhibit C

POSSIBLE BASE PLAN MODIFICATION AND ADDITIONS*

	1980				1981		1982		1983	1984	1985	1986	1987	1988	1989
	1st	2nd	3rd	4th	1st	2nd	1st	2nd							
Kerr Hydro Upgrade								F		P	P	C	C	C	
Thompson Falls Hydro						F			P	P	C	C	C		
Hauser Hydro						F			P	P	C	C	C		
Ryan Hydro						F			P	P	C	C	C		
Buffalo Rapids Hydro								F					P	P	C
Carter								F					P	P	C

F - File Application with Federal Energy Regulatory Commission

P - Preconstruction

C - Construction

*See text for explanation and discussion (pp. 8 & 9).

EXHIBIT "B2"

THE MONTANA POWER COMPANY
LOADS AND RESOURCES
PEAK - MW

	80-81	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89	89-90
FIRM PEAK LOAD	1255	1310	1355	1407	1485	1546	1582	1619	1649	1679
EXCESS INDUSTRIAL LOAD	21	28	32	33	---	---	---	---	---	---
EXCESS COOP LOAD	7	15	24	34	---	---	---	---	---	---
FORCED OUTAGE RESERVES	178	163	150	171	269	280	284	318	322	372
TOTAL PEAK REQUIREMENT	1461	1516	1561	1645	1754	1826	1866	1937	1971	2051
COMMITTED RESOURCES										
Hydro	518	518	518	518	518	518	518	518	518	518
Bird	70	70	70	70	70	70	70	70	70	70
Corette	180	180	180	180	180	180	180	180	180	180
Colstrip No. 1	165	165	165	165	165	165	165	165	165	165
Colstrip No. 2	165	165	165	165	165	165	165	165	165	165
Colstrip No. 3	---	---	---	210	210	210	210	210	210	210
Colstrip No. 4	---	---	---	---	210	210	210	210	210	210
Firm Transfers	244	290	296	248	249	251	253	104	106	108
NET COMMITTED RESOURCES	1342	1388	1394	1556	1767	1769	1771	1622	1624	1626
UNCOMMITTED RESOURCES										
Peak Resource						75	75	75	75	75
Peak Resource							25	25	25	25
Peak Resource								225	225	225
Peak Resource									25	25
Energy Resource										330
Peak Resource										
Energy Resource										
TOTAL UNCOMMITTED RESOURCES	---	---	---	---	---	75	100	325	350	680
TOTAL RESOURCES	1342	1388	1394	1556	1767	1844	1871	1947	1974	2306
SURPLUS (DEFICIENCY) OVER FIRM LOAD AND RESERVES	(119)	(128)	(167)	(89)	13	18	5	10	3	255
POTENTIAL LOADS (MEMO ONLY):										
Northern Tier Pipeline	---	---	16	19	35	46	69	69	69	69
Anaconda Co. (contract amount"-"forecast)	29	29	27	21	9	---	---	---	---	---

1) "FIRM PEAK LOAD" is from 1979 LOAD FORECAST after removing "EXCESS INDUSTRIAL LOAD".

2) "EXCESS INDUSTRIAL LOAD" is the forecasted peak load which is in excess of the present contract demands of eight of the large industrial contract customers. For this purpose, it is assumed that Hoerner Waldorf's "present" contract demand is for 55,000 KW firm and Exxon's "present" contract demand is for 25,000 KW firm. This excess is assumed to be firmed up after Colstrip No. 3 becomes commercial and is included in the "FIRM PEAK LOAD" after that time.

3) "EXCESS COOP LOAD" is the Coop's load in excess of their 1980 contract demand and is excess load that can be served them if surplus power is available. It is not included in the 1979 LOAD FORECAST.

4) Forced outage reserves are those reserves carried for ICP and increased by 15% of the net capability of Colstrip Units #3 and #4 and all other uncommitted plants. "FORCED OUTAGE RESERVES" is this total reserve requirement less excess loads (i.e. excess loads are carried by reserves).

5) Colstrip Units #3 and #4 become commercial January 1984 and November 1984 respectively.

6) "FIRM TRANSFERS" include BPA wheeling payment thru 1989-90.

7) Uncommitted peak resources are for peaking only - assumes negligible annual energy output.

TRANSMISSION
Ten Year Plan

Project & General Location	Voltage (kV)	Approx Length (Miles)	1980 1st Qr	1980 2nd Qr	1980 3rd Qr	1980 4th Qr	1981 1st Half	1981 2nd Half	1982 1st Half	1982 2nd Half	1983	1984	1985	1986	1987	1988	1989	1990
Colstrip-Broadview "B"	500	116	P	P	P	P	C	C	C	C								
Broadview-Townsend "A"	500	136	P	P	P	P	C	C	C	C	C							
Broadview-Townsend "B"	500	136	P	P	P	P	C	C	C	C	C							
Billings-Colstrip 230 kV Reroute at Colstrip	230	1.7				P	C											
Alkali Creek-Laurel	230	21				F		P	P	C	C							
Tap Wilsall-Alkali to Chrome Junction	230	45						F	P	P	P	C	C					
Wicks Lane East	230	4					P	P		C								
Bonner-Missoula #4	230	24			P		P	C	C									
Dillon-Sheridan	161	23			P	P	C											
Sheridan-Ennis	161	27			P	P	C	C										
Ennis-Big Sky	161	25			P	P	C	C										
Bozeman-Ennis	161	51			P	P	P	P	C	C								
Missoula #4-Hamilton	161	40			C	C	C											
Clyde Park-Emigrant	161	42					P	P	C	C								

CODE

F - File Application
P - Studies and Preliminaries Before Construction
C - Construction

TRANSMISSION
Ten Year Plan

Exhibit D
Sheet 2 of 2

Project & General Location	Voltage (kV)	Approx Length (Miles)	1980 1st Qr	1980 2nd Qr	1980 3rd Qr	1980 4th Qr	1981 1st Half	1981 2nd Half	1982 1st Half	1982 2nd Half	1983	1984	1985	1986	1987	1988	1989	1990
Great Falls-Conrad	115	60		F			P	P	P	C	C							
Conrad-Cut Bank	115	40								F	P	C	C					
Nichols Pump Line Reroute	115	2.9			P	C	C											
Laurel-Bridger "A"	100	0.6				C												
Broadview-Roundup	100	36	C															
Reserve Street-Waldorf	100	9				C	C											
Convert Rimrock-Bellrock-8th Street to 100 kV	100	12			F		C											
Laurel-Bridger "B"	100	33			F		P	C	C									
Plains Sub Tap	100	5			P	C	C											
Stanford-Glengaary Tie	100	36				F	P	P	P	P	C							
Hamilton Heights-Hamilton	69	7			C													
Emigrant-Gardiner	69	25					P	P	C	C								
Bridger-Red Lodge	50	24			C													
East Gallatin-Belgrade	50	10			C													
Bozeman 19th Street Sub to Tap Hot Springs South Side 50 kV	50	4				C	C											
Laurel-Mystic Loop	50	5				C	C											

CODE

F - File Application
P - Studies and Preliminaries Before Construction
C - Construction

Exhibit E

POTENTIAL TRANSMISSION

Project & General Location	Voltage (kV)	Approx. Length (Miles)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Rimrock Substation to Bellrock Substation to 8th St. Substation Convert line to 100 kV	100	12	FS	S	C								
230 System Tie to Benchland	100	10 or less	FS		S	C							
Roundup-Ivanhoe-Sumatra	100	50				FS	S	S	C				
Anaconda-Philipsburg-Drummond	100	53			F	S	S	S	C				
Garrison-Helena	230	50		FS	S	S	S	C					
Helena-Great Falls	230	80						FS	S	S	S	C	
Ovando-Missoula	230	60				F	S	S	S	C			
Plains-Superior or St. Regis	100	25		FS	S	S	C						
Tie from 230 kV in Dillon Area to Dillon-Salmon Sub.	161	10 or less			F	S	S	C					
Assinniboine-Richardson Coulee	161	160		FS	S	S	S	C					

F - File Application
S - Study Time & Hearing
P - Preconstruction
C - Construction

Exhibit F

TRANSMISSION PROJECTS FOR CONVERSION TO HIGHER VOLTAGE LEVELS OR TO BE RECONDUCTORED

Project & General Location	Voltage (kV)	Approx Length (Miles)	1980 1st Half	1980 2nd Half	1981 1st Half	1981 2nd Half	1982	1983	1984	1985	1986	1987	1988	1989	1990
Colstrip-Broadview "A"	500	113	P	P	P	P	P	C							
Missoula #4-Hamilton	161	40			C	C									

LIST OF CONTRACTS

	EFFECTIVE DATE	CONTRACT NO.
Pacific Northwest Coordination Agreement	09/15/64	14-03-48221
BPA-Firm Purchase, Amendment No. 4 (Amends earlier agreement in its entirety)	08/25/75	14-03-51702
BPA & WPPSS-Hanford Exchange	04/12/63	14-03-35621
Exhibit B (Points of Delivery)	09/01/73	
BPA & WPPSS-WPPSS No. 1 Exchange	02/06/73	14-03-39212
Amendment No. 1 (Relocation of Project)	05/31/74	
Letter Agreement (Option on Extended Operation & Cost of Relocation)	05/08/74	
BPA-Hanford Extension (1977-1983)	08/26/77	14-03/79120
Amendment No. 1 (Change of Fiscal Year)	05/18/78	
BPA-Exportable Energy (to Southwest)	01/13/69	14-03-73155
BPA-Hot Springs-Anaconda Wheeling	10/22/63	14-03-40534
Supplement No. 1 (Ovando-Gt. Falls)	03/17/67	
BPA-Glacier Co-op Wheeling	08/25/75	14-03-59142
BPA-Missoula Co-op Wheeling	01/15/68	14-03-74725
Amendment No. 1 (Huson)	04/30/75	
Amendment No. 2 (Clinton)	08/11/78	
MPC-Missoula Electric Co-op. Exhibit B Revision #1 Agreement For Use of Distribution Facilities (Wheeling to Petty Creek) (Miller Creek)	08/01/78	
BPA-Ravalli Co-op Wheeling	01/15/68	14-03-74726
Amendment No. 1 (Grantsdale)	03/18/71	
Amendment No. 2 (Victor)	10/18/74	
BPA-Northern Lights Co-op Wheeling	01/15/68	14-02-74724
MPC-Northern Lights Co-op Amendment #1 (Cherry Creek)	12/12/79	

	EFFECTIVE DATE	CONTRACT NO.
BPA-Vigilante Co-op Wheeling	08/21/67	14-03-53715
Amendment No. 1 (East Bench)	04/27/70	
Amendment No. 2 (Barretts)	09/24/77	
Amendment No. 3 (Gate of Mountains - Lump Gulch)	05/04/79	
MPC-Sun River Electric Co-op - Wheeling Letter Agreement (MPC Wheeling to Augusta)	10/04/78	
WAPA-Rainbow-Yellowtail - Wheeling Letter Agreement	12/22/77	
USBR-Anaconda-Billings or Hot Springs-Yellowtail Wheeling - Letter Agreement	03/22/68	
USBR-Interconnection, Exchange and Wheeling	05/14/64	14-06-600-8264
Supplement No. 4 (Maintenance)	05/14/70	
Letter Agreement (Reducing Supv. Control Payment)	08/04/72	
Supplement No. 5 (Yellowtail Interconnection)	07/05/71	
Letter Agreement (Net Billing)	12/10/64	
Revision No. 9 Exhibit A	09/25/78	
USBR-Missouri River Coordination	03/30/72	14-06-600-476A
Amendment #1 (Value of Benefits Payments)	06/08/79	
USBR-Cut Bank Line & Area Transmission	07/04/70	14-06-600-58A
USBR-Canyon Ferry-Rainbow Wheeling	01/25/51	179r-1838
Supplement No. 1 (Temp. Initial Service)	05/10/54	
Supplement No. 2 (Extending Term)	07/01/70	
Glacier Co-op-Cut Bank Interconnection Agreement	04/05/71	
AMPS Interconnection Agreement	04/21/65	
Service Schedule No. 1 (PUMI Agreement)	07/01/69	
Exhibits A-1; A-2 (Revised)	08/19/69	
Exhibits A-2 (Revised)	02/01/70	
Exhibits A-2 (Revised)	08/01/71	
Memo of Understanding (O&M Accounting Procedures)	10/01/71	
Idaho-Montana Service Schedule (Interchange, Purchase & Sale)	04/21/65	
Amendment No. 1 (Extending Term)	03/01/74	
Idaho, Utah, Montana Interconnection Agreement	03/04/41	

	EFFECTIVE DATE	CONTRACT NO.
Service Schedule A-3 with Utah (Sale)	02/14/74	
Service Schedule B-2 with Utah (Exchange)	02/14/74	
Service Schedule F-2 with Idaho (Salmon use of Facilities)	10/01/54	
ICP Agreement (Intercompany Pool)	09/01/73	
PP&L-Montana Exchange Agreement	12/21/65	
PP&L-Montana Mutual Wheeling Letter Agreement	04/24/67	
USIIS Sales Agreement (Flathead Irrigation Project)	07/01/70	
WSCC Agreement (Western Systems Coordinating Council)	08/04/67	
WWP-Contract (Sale & Exchange)	10/01/64	
Amendment No. 1 (Hydro @ BPA Rates)	08/31/66	
Amendment No. 2 (Sale of Firm Peaking Power)	07/01/70	
WWP-Letter Agreement (Hanford Energy Exchange for Peak)	09/02/75	
Central Montana Generation and Transmission Cooperative (Sale to Co-ops)	01/30/74	
Exhibit A (Revised)	10/27/76	
Exhibit B (Revised)	10/27/76	
Exhibit C (Rate Schedule)	07/01/74	
Big Horn Co-op-Power Agreement	03/12/71	
Letter of Understanding (Yellowtail Details)	03/12/71	
Supplement No. 1 (Contract Demand & Rates)	02/15/74	
Tongue River Co-op-Power Agreement (Colstrip-Ashland Area)	08/17/59	
PGE-Exchange Letter Agreement (Capacity & Energy Exchange)	09/08/78	
Revised Appendix 1 to Exchange Letter Agreement	10/01/78	
PGE-Exchange Letter Agreement (Capacity & Energy Exchange)	01/11/80	
Appendix 1 to Exchange Letter Agreement	01/11/80	

EXHIBIT H

Growth rates* in sales by sector and peak and energy loads. All growth rates are average annual growth rates calculated against 1978 actual data.

Sales	1978-1982 %	1978-1987 %	1978-2000 %
Residential	9.12	6.30	4.21
Commercial	7.02	5.56	3.19
Small Industrial	2.43	1.98	1.73
Large Industrial	6.56	4.34	1.87
Other	3.74	2.37	1.57
Total	6.57	4.70	2.84
Load			
Energy	6.52	4.67	2.83
Peak	6.09	4.44	2.54

*Note that growth rates are useful for comparing changes over time in a given sector, but they may be misleading if used for other types of comparisons. This is because there exists no truly "average year" against which to base the starting point! This is true both in comparisons between sectors in a utility and between utilities.

EXHIBIT I

Growth rates for important input variables. All growth rates are average annual growth rates calculated against 1978 actual data.

	1978-1985 %	1978-1990 %	1978-2000 %
Population	1.50	1.25	0.89
IPI*	1.56	2.45	2.10

*Industrial Participation Income which is comprised of wages and salaries paid to manufacturing employees in Montana except those working in the firms composing the Large Industrial sector.

EXHIBIT "J" IS VOLUMINOUS

AND HAS BEEN SUBMITTED

ONLY TO THE DEPARTMENT OF

NATURAL RESOURCES & CONSERVATION

EXHIBIT "K" IS VOLUMINOUS

AND HAS BEEN SUBMITTED

ONLY TO THE DEPARTMENT OF

NATURAL RESOURCES & CONSERVATION